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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,713	01/06/2004	Daniel C. Edelstein	FIS920030255US1	1712

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INTERNATIONAL BUSINESS MACHINES CORPORATION
DEPT. 18G
BLDG. 300-482
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EXAMINER	
WILLIAMS, ALEXANDER O	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/707,713	EDELSTEIN ET AL.
	Examiner	Art Unit
	Alexander O. Williams	2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *17-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Serial Number: 10/707713 Attorney's Docket #: FIS920030255US1
Filing Date: 1/6/2004;

Applicant: Edelstein et al.

Examiner: Alexander Williams

Applicant's Amendment filed 10/21/05 to the election of Group I (claims 1 to 16), filed 8/19/04, has been acknowledged.

This application contains claims 17 to 31 drawn to an invention non-elected without traverse.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 8 and 10 to 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yamazaki et al. (Japan Patent # 5-335482).

1. Yamazaki et al. (figures 1 to 2F) specifically figure 1 show a semiconductor wafer comprising: a substrate **1**; a plurality of integrated circuits chips **(1st and 2nd thin film transistors)** fabricated on said substrate; a dicing channel **16** disposed between adjacent ones of said integrated circuits chips, said channel exposing sidewalls of said integrated circuits; a layer of first dielectric material **9** disposed on a top surface and sidewalls of said integrated circuits chips; and at least one layer of at least one second dielectric material **14** disposed on said layer of first dielectric material, wherein said first dielectric material has a Gc value of at least about 10 times greater than said second dielectric material (inherit since the material used is in the same group of Applicant's claimed material used).

2. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said first dielectric material has a Gc value greater than about 0.1 kj/m2 (inherit since the material used is in the same group of Applicant's claimed material used).

3. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said first dielectric material has a Gc value of about 0.5 to about c 2.5 kj/m2 (inherit since the material used is in the same group of Applicant's claimed material used).

4. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said second dielectric material has a Gc value less than about c 0.05 kj/mz (inherit since the material used is in the same group of Applicant's claimed material used).

5. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said second dielectric material has a G value of about 0.005 to c about 0.05 kJ/m2 (inherit since the material used is in the same group of Applicant's claimed material used).

6. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said first dielectric material has a tensile strength of about 20 to 100 Mpa (inherit since the material used is in the same group of Applicant's claimed material used).

7. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said second dielectric material has a tensile strength of about 700 to 10, 000 M Pa (inherit since the material used is in the same group of Applicant's claimed material used).

As to claims 2 to 8, Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

8. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said first dielectric material **9** is selected from the group consisting of polyesters, phenolics, **polyimides**, polysulfones, polyether ether ketones, polyurethanes, epoxies, polyarylene ethers, and polyethylene terepthalates.

10. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said second dielectric material **14** is selected from the group consisting of SiNX, **SiOz**, SiC, TEOS, FTEOS, FSG, and OSG.

11. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said second dielectric material **14** is SiO2.

12. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said dicing channel exposes sidewalls of said integrated circuits and sidewalls of said substrate.

Initially, it is noted that the 35 U.S.C. § 103 rejection **based on a plurality of layers deals with an issue (i.e., the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece) that has been previously decided by the courts.**

In Howard v. Detroit Stove Works 150 U.S. 164 (1893), the Court held, "it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together...."

In In re Larson 144 USPQ 347 (CCPA 1965), the term "integral" did not define over a multi-piece structure secured as a single unit. More importantly, the court went further and stated, "we are inclined to agree with the solicitor that the use of a one-piece construction instead of the [multi-piece] structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice" (bracketed material added). The court cited In re Fridolph for support.

In re Fridolph 135 USPQ 319 (CCPA 1962) deals with submitted affidavits relating to this issue. The underlying issue in In re Fridolph was related to the end result of making a multi-piece structure into a one-piece structure. Generally, favorable patentable weight was accorded if the one-piece structure yielded results not expected from the modification of the two-piece structure into a single piece structure.

Therefore, it would have been obvious to one of ordinary skill in the art to use the plurality of layers as "merely a matter of obvious engineering choice" as set forth in the above case law.

Claims 13 to 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over by Yamazaki et al. (Japan Patent # 5-335482).

13. The semiconductor wafer of Claim 1, Yamazaki et al. further comprising a plurality of conductors embedded in said first dielectric material and said second dielectric material and in contact with said plurality of integrated circuits.

14. The semiconductor wafer of Claim 13, Yamazaki et al. show wherein said conductors are S-shaped or spring shaped or jogged (Same as so far as Applicant's show).

15. The semiconductor wafer of Claim 1, Yamazaki et al. show wherein said semiconductor wafer comprises a plurality of layers of said at least one second dielectric material.

Therefore, it would have been obvious to one of ordinary skill in the art to use the plurality of layers as "merely a matter of obvious engineering choice" as set forth in the above case law.

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki et al. (Japan Patent # 5-335482) in view of Sun et al. (U.S. Patent Application Publication # 2003/0222330 A1).

Yamazaki et al. show the features of the claimed invention as detail above, but fail to explicitly show wherein said first dielectric material is a polyarylene ether.

Sun et al. is cited for show a passivation processing over a memory link. Specifically, Sun et al. (figures 1 to 11C) specifically figure 3C discloses a dielectric material is a polyarylene ether **46** for the purpose of preventing defects resulting from alignment variations of subsurface layers or patterns contaminated.

Therefore, it would have been obvious to one of ordinary skill in the art to use Sun et al.'s polyarylene ether dielectric material to modify Yamazaki et al.'s dielectric material for the purpose of preventing defects resulting from alignment variations of subsurface layers or patterns contaminated.

Response

Applicant's arguments filed 10/21/05 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

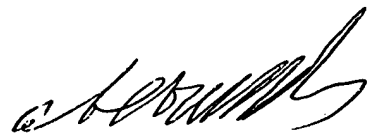
The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/788,789,790,787,758,700,701,620	11/1/04 7/22/05 12/29/05
Other Documentation: foreign patents and literature in 257/788,789,790,787,758,700,701,620	11/1/04 7/22/05 12/29/05
Electronic data base(s): U.S. Patents EAST	11/1/04 7/22/05 12/29/05

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander O Williams
Primary Examiner
Art Unit 2826

AOW
12/29/05